

American Society of Dentist Anesthesiologists

Parameters of Care

September 26, 2016

[February 21, 2018](#)

1 Introduction

2 The American Society of Dentist Anesthesiologists' (ASDA) Parameters of Care describe the range of
3 appropriate anesthetic practices by dentist anesthesiologists for patients undergoing dental,
4 oral, maxillofacial and adjunctive surgical procedures within the scope of dental practice.
5 **Anesthesiology is the practice of dentistry.** These Parameters of Care include standards,
6 guidelines and management strategies in an effort to assist dentist anesthesiologists in
7 maximizing the safety and comfort of ~~their dental~~ patients while minimizing risks and
8 discomfort. Individuals with expertise and broad, in-depth clinical experience in the wide variety
9 of anesthesia practice venues used in dentistry prepared these practice parameters. ~~Their~~
10 Conclusions were derived on the basis of review of the scientific literature, various standards
11 and guidelines, as well as parameters of care of other major anesthesia provider organizations.
12 The ASDA believes these parameters help broaden the range of practices to include the
13 professional judgment of the practitioner. Given the dynamic nature of anesthesia practice
14 within dentistry, these Parameters will be updated as needed to reflect advancements in the art
15 and science of anesthesia.

16 While these Parameters of Care are designed to assist the dentist anesthesiologist in determining the
17 most appropriate anesthetic care options, the ultimate decision regarding treatment of an
18 individual patient lies with the provider based on the specific clinical circumstances.
19 Furthermore, adherence to these Parameters does not guarantee a successful clinical outcome.
20 When circumstances require a deviation from these Parameters, the provider is advised to
21 indicate the circumstances and rationale for the deviation in the clinical record.

22 The ASDA strongly supports these Parameters of Care for practicing dentist anesthesiologists. ~~and~~
23 ~~acknowledges that other professional organizations may determine their own practice guidelines for~~
24 ~~sedation and general anesthesia. At the same time, the ASDA supports the American Dental~~
25 ~~Association's (ADA's) Guidelines for the Use of Sedation and General Anesthesia by Dentists, and the~~
26 ~~associated Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students, as~~
27 ~~minimum guidelines that should be followed by all dentists providing any form of sedation or general~~
28 ~~anesthesia.~~

29

30

31 The Continuum of Sedation and Anesthesia

32 Sedation and anesthesia comprise a continuum of peripheral and central nervous system
33 depression ranging from local anesthesia through various levels of sedation to general
34 anesthesia. The ASDA Parameters of Care support the definitions of local anesthesia, minimal
35 sedation, moderate sedation, deep sedation and general anesthesia as defined in the ADA's
36 *Guidelines for the Use of Sedation and General Anesthesia by Dentists*. Because dentist

37 anesthesiologists are trained to **proficiency competency** in all levels of sedation and general
38 anesthesia **for dentistry**, dentist anesthesiologists intending to produce a given level of sedation
39 are able to diagnose and manage the physiologic consequences (rescue) for patients whose
40 level of sedation becomes deeper than initially intended or, if appropriate, convert the level of
41 sedation to either deep sedation or general anesthesia or otherwise alter the sedation or
42 general anesthesia as needed based on patient and surgical needs.

43 **Definitions**

44 **analgesia** - the diminution or elimination of pain.

45 **local anesthesia** - the elimination of sensation, especially pain, in one part of the body by the topical
46 application or regional injection of a drug.

47 **minimal sedation** - a minimally depressed level of consciousness produced by a pharmacological
48 method that retains the patient's ability to independently and continuously maintain an airway
49 and respond *normally* to tactile stimulation and verbal command. Although cognitive function
50 and coordination may be modestly impaired, ventilatory and cardiovascular functions are
51 unaffected.

52 **moderate sedation** - a drug-induced depression of consciousness during which patients respond
53 *purposefully* to verbal commands, either alone or accompanied by light tactile stimulation. No
54 interventions are required to maintain a patent airway, and spontaneous ventilation is
55 adequate. Cardiovascular function is usually maintained. Further, a patient whose only response
56 is reflex withdrawal from a painful stimulus is not considered to be in a state of moderate
57 sedation.

58 **deep sedation** - a drug-induced depression of consciousness during which patients cannot be easily
59 aroused but respond purposefully following repeated or painful stimulation. The ability to
60 independently maintain ventilatory function may be impaired. Patients may require assistance
61 in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular
62 function is usually maintained.

63 **general anesthesia** - a drug-induced loss of consciousness during which patients are not arousable, even
64 by painful stimulation. The ability to independently maintain ventilatory function is often
65 impaired. Patients often require assistance in maintaining a patent airway, and positive pressure
66 ventilation may be required because of depressed spontaneous ventilation or drug-induced
67 depression of neuromuscular function. Cardiovascular function may be impaired.

68 **standards** - clinical practices that are to be applied in all cases. Deviation from standards would be
69 difficult to justify. A standard of care indicates that measurable criteria are present and these
70 criteria shall be used in order to arrive at a given level of outcome.

71
72 **guidelines** - clinical practices that should be followed in most cases, with the realization that treatment
73 may be tailored to fit individual needs, depending on the patient, setting and other factors.
74 Deviations from guidelines may be justified by differences in individual circumstances.

75
76 **protocols** - descriptions of the process of care for individual patients.
77

*

* The above definitions are excerpts from the ADA's *Guidelines for the Use of Sedation and General Anesthesia by Dentists*

78 **Dentist anesthesiologist** - a dentist who has successfully completed an accredited postdoctoral
79 anesthesiology residency training program for dentists, three years in duration, in accord with
80 Commission on Dental Accreditation (CODA) Standards for Dental Anesthesiology Residency
81 Programs, qualifying them to administer all levels of the continuum of sedation and anesthesia
82 care within the scope of their dental license.[†]
83

84 **must/shall** – indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

85
86 **should** – indicates the recommended manner to obtain the standard; highly desirable.

87
88 **may** – indicates freedom or liberty to follow a reasonable alternative.
89
90

91 **Venues for Anesthesia Delivery**

92 Sedation and general anesthesia can be safely delivered in a variety of venues. Hospital operating
93 rooms, ambulatory surgery centers and dental offices vary widely in size and complexity, but all
94 anesthetic practices, whether fixed in one or more locations or mobile and transferred to
95 multiple venues, must provide adequate anesthetic equipment, monitors and medications for
96 the safe conduct of the anesthetic plan and for successful management of emergencies that
97 might arise. The ASDA endorses the ADA's *Guidelines for Sedation and General Anesthesia by*
98 *Dentists* as minimum standards for determining the adequacy of any office venue as an
99 anesthetizing location, whether fixed in only one office, in several satellite offices or in the
100 multiple offices that mobile dentist anesthesiologists transform into a fully equipped
101 anesthetizing facility. ~~when they are there.~~

102
103 The ASDA endorses state dental board evaluation of sedation and general anesthesia practitioner
104 practice and competence in providing sedation and/or general anesthesia at initial licensure and
105 periodically as required. The actual evaluation by a dental board or a recognized national
106 accrediting organization can be at either the fixed office location of a dentist anesthesiologist's
107 practice or in the case of a mobile anesthesia practice, at any one location where the mobile
108 dentist anesthesiologist provides services. It is the quality of the mobile anesthesia practitioner
109 and practice systems that should be evaluated for patient safety, irrespective of the actual
110 physical location. ~~of the practice for that particular day.~~ The dentist anesthesiologist must
111 ensure that all facilities where sedation and/or general anesthesia is provided, whether at the
112 primary location, a satellite location or at multiple locations, are held to the same standard of
113 excellence, are comparably equipped with anesthetic emergency drugs and equipment, and that
114 the operating dentist and/or auxiliary staff are adequately trained to assist the dentist
115 anesthesiologist. For dentist anesthesiologists who have a mobile anesthetic practice, state
116 inspection or national accreditation of the facility must only take place when the dentist

†

[®]Prior to 2012, dentists who completed an anesthesiology residency prior to CODA accreditation but in accordance with CODA standards or the previous standards of the American Dental Association's *Guidelines for Teaching the Comprehensive Control of Pain and Anxiety in Dentistry, Part II*, in effect at the completion of their program, are also qualified as dentist anesthesiologists if they met the eligibility requirements for examination by the American Dental Board of Anesthesiology.

117 anesthesiologist is actually present ~~at that particular facility~~. So long as the mobile dentist
118 anesthesiologist has all the necessary drugs, monitors, and anesthesia equipment in a facility at
119 the time of patient treatment, there is no need to have these drugs present or permanently
120 installed monitors and anesthesia equipment at that facility when the dentist anesthesiologist is
121 not in attendance. Once a dentist anesthesiologist has undergone a successful anesthesia
122 evaluation in one location, there is no need to undergo subsequent evaluations in other offices
123 or facilities where the dentist anesthesiologist intends to provide services. When the dentist
124 anesthesiologist is in the office of another practitioner to provide the anesthesia, monitor the
125 patient and manage emergencies, the operating dentist/surgeon and the dental/surgical
126 assistant must be trained and currently certified in Basic Life Support for the Health Care
127 Provider to assist, *as needed*, the dentist anesthesiologist in providing basic life support and
128 calling for emergency medical services. Within this context, and with comprehensive training
129 dedicated to the delivery of anesthesia care in dental practice, the dentist anesthesiologist is
130 thoroughly capable of independently managing all aspects of emergency care.
131

132

133 **Personnel**

134

135 The dentist anesthesiologist must maintain current completion of an Advanced Cardiac Life Support
136 course. In addition, the dentist anesthesiologist must ensure that the operating dentist/surgeon
137 and dental/surgical assistant are current in Basic Life Support *for the Health Care Provider*.
138 Preferably, in place of the dentist/surgeon or dental/surgical assistant, the dentist
139 anesthesiologist may have qualified personnel to aid with anesthesia ~~care~~ *administration* and
140 recovery.

141 In addition, the dentist anesthesiologist must maintain current completion of a Pediatric Advanced Life
142 Support course when treating children less than 13 years of age. A second qualified individual
143 with PALS certification should be immediately available to assist the dentist anesthesiologist
144 with the rescue of a pediatric patient that develops an adverse anesthetic event. Preferably, in
145 place of the dentist/surgeon or dental/surgical assistant, the dentist anesthesiologist may have
146 qualified personnel to aid with anesthesia ~~care~~ *administration* and recovery.

147 The responsibilities of the dentist anesthesiologist include conducting an appropriate pre-anesthetic
148 history and physical evaluation, continually monitoring, evaluating and managing the patient's
149 vital signs as well as the adequacy of ventilation/oxygenation, cardiovascular status, other
150 homeostatic processes and the level of sedation/general anesthesia. The dentist
151 anesthesiologist is responsible for the administration of sedative and general anesthetic
152 medications, capable of managing emergencies related to the medical/anesthetic care of the
153 patient, and overseeing the recovery process until the patient is able to independently and
154 continuously maintain their airway and is otherwise in stable condition.

155 When deep sedation or general anesthesia is employed in a dental setting for patients, a minimum of
156 three (3) individuals must be present: the operating dentist /surgeon, the dentist
157 anesthesiologist and a dental/surgical assistant (and/or another staff member who is involved in
158 minor, interruptible tasks) who can aid in resuscitative efforts. The dentist anesthesiologist
159 provider must not be simultaneously involved in the conduct of the dental procedure or surgery,

160 unless supervising another licensed anesthesia provider (e.g., Certified Registered Nurse
161 Anesthetist) *is present*.

162 When moderate sedation is employed in a dental setting for a patients, the dentist anesthesiologist,
163 when simultaneously involved in the conduct of the dental procedure or surgery, must have at
164 least one (1) qualified personnel whose responsibility is to monitor appropriate physiologic
165 parameters and to assist in any supportive or resuscitation measures, if required. The
166 individual(s) may also be responsible for assisting with interruptible patient-related tasks of
167 short duration.

168 * Note that dental assistants, dental sedation assistants, etc., even if legally allowed to perform some functions listed by a state
169 dental board, are not autonomously licensed nor educationally qualified to provide ACLS or PALS support.
170

171 **Protocols for the Delivery of Anesthesia for Dental Procedures**

172 **Patient Evaluation and Preparation**

173 1. Prior to undergoing sedation or anesthesia, a patient must be evaluated with an appropriate
174 medical history that includes a review of major organ systems, medications, allergies,
175 previous surgeries and illnesses, previous anesthetic history, level of physical activity,
176 tobacco and recreational drug use, **history of sleep apnea**, and other relevant history. A
177 focused physical examination, including determination of the height, weight and other vital
178 signs, as well as assessment of the heart, lungs and airway **should must** be performed and
179 documented. When indicated, appropriate laboratory, cardiovascular and pulmonary
180 assessments and preoperative consultations should be obtained. Pertinent results should be
181 documented along with a physical status assessment (e.g., The American Society of
182 Anesthesiologists (ASA) Physical Status Classification).

183 2. The dentist anesthesiologist shall devise an anesthetic plan that is appropriate for the
184 physical status of the patient, the pain and anxiety control needs of the patient, the nature
185 of planned surgical procedure, the skill of the surgeon and the treatment venue. The choice
186 of an appropriate anesthetic delivery mode will be made in consideration of the depth and
187 duration of anesthesia, the complexity of the procedure, the training, experience and
188 immediate availability of support staff throughout the entire procedure, and the anticipated
189 degree of post-anesthesia care.

192 3. The risks, benefits, expected outcomes and possible anesthetic alternatives must be
193 reviewed with the patient or the patient's legal guardian, and informed consent must be
194 obtained for the anesthetic plan.

196 4. Appropriate pre-operative fasting instructions, in accord with ASA Guidelines, must be
197 applied and met prior to the start of anesthesia.

198 5. The dentist anesthesiologist is responsible for determining the adequacy of the clinical
199 environment, support staff, and emergency preparedness prior to the start of anesthesia.
200 This includes, but is not limited to, ensuring the immediate availability of:

- 201 6. Appropriate, functioning suction device and light sources, including backup devices in the
202 event of a power outage.
203
- 204 7. Adequate oxygen supply, positive pressure oxygen delivery system, and anesthetic gas
205 scavenging as ~~needed~~ *indicated*.
- 206 8. Airway adjuncts and equipment to secure the patient's airway, along with equipment and
207 monitors needed for airway management.
- 208 9. Equipment and supplies necessary to establish and maintain an intravenous infusion.
209
- 210 10. When intravenous access is indicated, an indwelling catheter must be used.
211
- 212 11. Monitoring sufficient to provide standard, continuous assessment of oxygenation,
213 ventilation, circulation and cardiac rhythm for all patients as well as monitoring and
214 equipment for determining body temperature, end-tidal carbon dioxide and neuromuscular
215 function for appropriate patients and anesthetic plans, throughout the case and in the event
216 of power outage.
217
- 218 12. Inspired oxygen analyzer, with low oxygen concentration alarm, when a general anesthesia
219 machine is used. When dental nitrous oxide/oxygen delivery devices are used, flow safe/fail
220 safe devices must be present and functional.
221
- 222 13. Drugs and equipment in appropriate sizes sufficient to carry out resuscitation and the
223 management of common anesthetic complications and emergencies. This should include
224 drugs, equipment and staff needed to assist with advanced cardiac life support, including
225 defibrillation, until the patient is transferred to an acute care facility.
226
- 227 14. When triggering agents for malignant hyperthermia are present, dantrolene and other
228 appropriate drugs, supplies and equipment must be immediately available.
229
- 230 15. Patient transport to an acute care facility capable of managing anesthetic emergencies that
231 may arise.

232 **Monitoring and Intraoperative Management**

233 The dentist anesthesiologist shall be responsible for establishing continuous monitoring of the
234 patient's physiologic condition, as appropriate for the patient's needs and the level of anesthesia
235 planned. For moderate sedation, deep sedation and general anesthesia, this includes, but is not limited
236 to:

237 **Monitoring of ventilation**

- 238 1. Continuous monitoring of end tidal carbon dioxide is required.
- 239 2. A precordial or pretracheal stethoscope may be used to monitor breath sounds. In situations
240 where end tidal carbon dioxide monitoring is precluded or invalidated by the nature of the
241 patient, procedure or equipment, a precordial or pretracheal stethoscope must be used.

- 242 3. Observation of chest excursions and other clinical signs as appropriate.
- 243 4. Continuous monitoring of oxygenation via pulse oximetry
- 244 5. Monitoring of cardiovascular function
- 245 6. Continual monitoring of arterial blood pressure at least every 5 minutes and continuous
246 monitoring of pulse rate.
- 247 7. Continuous electrocardiographic and heart rate monitoring.
- 248 8. Monitoring of body temperature when indicated
- 249
- 250 9. When triggering agents for malignant hyperthermia are utilized, continuous body
251 temperature monitoring must be provided.
- 252 10. Monitoring of neuromuscular function when indicated
- 253 11. Monitoring of Anesthetic Gases
- 254
- 255 12. Continuous monitoring of inspired and expired anesthetic gas concentrations should be
256 performed when utilized.
- 257
- 258 13. A time-oriented anesthetic record must be maintained; including monitored physiological
259 parameters, anesthetic interventions, and the names, doses and times of all drugs **and fluids**
260 administered, including local anesthetics. The recorded physiological parameters **will must**
261 include pulse oximetry, heart rate and rhythm, blood pressure, respiratory rate, and other
262 indicated monitor values, recorded at appropriate intervals.
- 263 14. The dentist anesthesiologist is responsible for managing the administration of anesthetic
264 drugs and adjusting the anesthetic treatment plan according to the changes in the patient's
265 physiologic status.
- 266 15. The dentist anesthesiologist is responsible for maintaining patient homeostasis during the
267 perioperative period.
- 268 16. The dentist anesthesiologist is responsible for positioning and protecting the patient to help
269 avoid injury to the patient, himself/herself or others during the period of anesthesia.
270 Extremities should be secured and padded when indicated to avoid peripheral nerve injury.
271 Appropriate eye protection should be provided for the patient during times of potential
272 vulnerability. ~~to the eyes.~~ **Oxidizers, ignition sources, and fuels should be closely**
273 **monitored to prevent surgical site fires.**

274

275 **Recovery and Discharge**

- 276 1. Suction equipment and oxygen **(supplemental and positive pressure delivery devices)** must
277 be immediately available in the recovery location.

- 278 2. Blood pressure, level of oxygenation, pulse rate and level of consciousness must be
279 monitored until fitness for discharge is achieved.
- 280 3. Adequate postoperative pain control and control of postoperative nausea and vomiting
281 should be achieved.
- 282 4. Postoperative verbal and written instructions must be given to the patient, parent, escort,
283 guardian or caregiver.
- 284 5. The dentist anesthesiologist working in the office setting may utilize appropriately trained
285 support staff **or qualified personnel**, as defined above for use during the intraoperative
286 period, for recovery. Once the patient has reached a state of minimal sedation **and is**
287 **stable**, other trained staff may be used to monitor recovery. The dentist anesthesiologist
288 must be continuously present and immediately available in the office during the
289 postoperative period until the patient is safe for discharge.
- 290 6. The dentist anesthesiologist is responsible for determining and documenting when the
291 criteria for discharge have been met and to which responsible adult the patient is
292 discharged.

293

294 **Emergency Management**

295 The dentist anesthesiologist is responsible for the diagnosis and treatment of emergencies related to the
296 administration of anesthesia and ensuring the immediate availability of all necessary emergency
297 equipment, drugs and supplies for patient rescue. In addition, the dentist anesthesiologist is
298 responsible for stabilizing, if possible, the vital signs and other physiological parameters of the
299 patient during surgical urgencies and emergencies that impact the patient's vital functions.

300

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